3-7-77

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

March 7, 1977

SUBJECT: 1976 Annual Report on Ocean Dumping Activities

FROM: T. E. Landry
Region I Ocean Disposal Coordinator

TO: J. A. Wastler WH-548
Chief, Marine Protection Branch

Attached is the annual report for calendar year 1976 for Region I ocean disposal activities. This region has only one permit for ocean disposal which expired on June 30, 1976 and was reissued on September 26, 1976.

Until this reissuance, there was no alternative method of disposal for hazardous miscellaneous laboratory chemicals in Region I. With the assistance of the State of Massachusetts, alternate means of disposal have been obtained: recycle, salvage, or shipment to approved out-of-state land disposal sites (Model Cities for example). Therefore, the new permit 76-1 does not allow these chemicals to be dumped.

When these chemicals were dumped in Permit 75-1, only 2 gallons or about 12 pounds were encased in concrete within a single 55 gallon drum. Normally the maximum amount of any type of chemical dumped at one time was about 1 liter with the vast majority of the samples less than 100 grams each. During the permit life of 75-1, I would estimate about 1000 to 2000 different types of chemicals were manifested.

With the new permit 76-1, only overage, hazardous, or defective explosives and alkali metal compounds are dumped. About 20 pounds of explosives are encased in concrete within a 55 gallon drum. As usual, the alkali metals (sodium, lithium, and magnesium) are reacted with sea water by rupturing the drums with rifle fire. Approximately 300 pounds of reactants are normally in each 55 gallon drum.

Attachment: As noted

cc: L. Carothers
S. Peterson

TABLE 1

Ocean Dumping Report Summary, 1977

Permittee: Special Projects & Engineering
3 Malden Street
Quincy, MA

Number of Trips: 6

Material		Amount Dumped
Alkali Metals	129 barrels (55 gal)	17,600 kg
Explosives	43 barrels (20#/barrel)	1,900 kg
Total Disposal wt.		19,500 kg

8. Expected frequency of dumping:

1 trip per month

9. Chemical composition of the material:

Metallic sodium, metallic lithium, magnesium, and explosives imbeded in concrete.

10. Biological properties of the material:

a) Toxicity

Organism	TLm (96 hr)
None	

b) Other significant biological properties:

None

11. Physical properties of the material:

(a) Percent soluble in seawater _____

(b) Density (g/cc) 1.12 (explosive)

(c) pH _____

(d) Interaction with seawater to form precipitate: yes ___ no X

(e) Nature of precipitate (if any)

London Dumping Convention

Report on Ocean Dumping - CY 1977

1. Issuing authority:

   United States Environmental Protection Agency

   Region I

2. Date Issued: 26 September 1976

3. Country of origin of material:

   U.S.A., Massachusetts

   Port of loading (activity location):

   Hingham, Massachusetts

4. General description of material, and process from which derived (industrial or municipal process, municipal source):

   Alkali earth - residue from industrial chemical process.
   Explosives over aged, hazardous or defective.

5. Form in which material is presented for disposal (i.e., solid, liquid, sludge):

   Both solid and liquid, both containerized.

6. Total quantity (in metric units - volume and weight) authorized by the permit: 380 liters containing 4,540 kg material
   Explosives
   Alkali metal compounds - 25,000 liters containing 16,350 kg material

7. Period for which permit is valid:

   26 September 1976 - 1 November 1977

12. Method of packaging (e.g., bulk, container):

Bulk and container - encased in concrete (explosives only)

13. Method and rate of release:

a. Alkali metals; the alkali metals and their compounds shall be introduced into the ocean within their containers. The container may be exploded with small arms fire as it floats on the surface. Before the next container is released, the first container shall be completely reacted with the water. A minimum time interval of four minutes shall be maintained between dumping consecutive drums.

b. Containerized/encased materials: Containers shall be released from the vessel one at a time so as to sink to the bottom. A minimum interval of one minute shall be maintained between dumping consecutive drums. If the drum does not sink, it shall be retrieved, returned to shore, and repackaged for dumping at a later date.

c. Simultaneous dumping of alkali metals and containerized materials is prohibited.

c. A maximum of 60 drums of materials (alkali metals and explosives) may be dumped on any one trip.

14. Procedure and site of subsequent barge/tank washing:

None

15. Approved dumping site:

a) Geographical position:

Latitude	Longitude
42° 26'N	70° 35'W

b) Depth of water (meters): 100 meters

c) Distance (kilometers) from nearest coast: 20 kilometers

16. Additional information: None